

This dissertation has been  
microfilmed exactly as received 68-17,605

VOGEL, Richard, 1942-  
THE EFFECT OF EXPERIMENTALLY INDUCED  
CONFLICT ON CREATIVE ACTIVITY.

The University of Oklahoma, Ph.D., 1968  
Psychology, experimental

University Microfilms, Inc., Ann Arbor, Michigan

THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

THE EFFECT OF EXPERIMENTALLY INDUCED  
CONFLICT ON CREATIVE ACTIVITY

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF PHILOSOPHY

BY

RICHARD VOGEL

Norman, Oklahoma

1968

THE EFFECT OF EXPERIMENTALLY INDUCED  
CONFLICT ON CREATIVE ACTIVITY

APPROVED BY

Logan Wright  
Ed Breenda  
Thomas Mulla  
William B. Hood  
Paul R. Jacobs

DISSERTATION COMMITTEE

#### ACKNOWLEDGMENTS

I wish to thank each member of my thesis committee for his advice, time, and interest. I am especially grateful to Dr. Logan Wright, dissertation director, for aiding in the development of the problem. His advice, support, and encouragement during the preparation of this research was invaluable.

Special thanks also go to Dr. Bob Edelberg for providing the skin conductance device used in this study.

I wish also to thank Mrs. Sue Harkness for her help in typing this dissertation.

## TABLE OF CONTENTS

|                                                         | Page |
|---------------------------------------------------------|------|
| LIST OF TABLES . . . . .                                | v    |
| Chapter                                                 |      |
| I.    INTRODUCTION AND PROBLEM . . . . .                | 1    |
| II.   PILOT STUDY. . . . .                              | 16   |
| III.  METHOD . . . . .                                  | 23   |
| IV.   RESULTS. . . . .                                  | 28   |
| V.    DISCUSSION . . . . .                              | 32   |
| VI.   SUMMARY. . . . .                                  | 39   |
| REFERENCES . . . . .                                    | 42   |
| APPENDIX A. Likert Conflict Scale . . . . .             | 45   |
| APPENDIX B. Consequences. . . . .                       | 47   |
| APPENDIX C. Alternate Uses. . . . .                     | 49   |
| APPENDIX D. Raw Data for Control Subjects . . . . .     | 51   |
| APPENDIX E. Raw Data for Experimental Subjects. . . . . | 53   |
| APPENDIX F. Circles Test. . . . .                       | 55   |

## LIST OF TABLES

| Table                                                                                     | Page |
|-------------------------------------------------------------------------------------------|------|
| 1. t Test Comparing Grade Point Averages for<br>Experimental and Control Groups . . . . . | 29   |
| 2. Means and Standard Deviations for Alternate Use Task . . . .                           | 29   |
| 3. Means and Standard Deviations for Consequences Test. . . . .                           | 30   |
| 4. Means and Standard Deviations for Circles Test . . . . .                               | 31   |

# THE EFFECT OF EXPERIMENTALLY INDUCED CONFLICT ON CREATIVE ACTIVITY

## CHAPTER I

### INTRODUCTION AND PROBLEM

The study of creativity brings into a single arena the representatives of several disciplines including psychology, biography, education, literature, drama, art, and both the physical and behavioral sciences. In attempting to understand how man's creative achievements come about, psychological researchers have followed two general approaches in recent years. These include an attempt to discover the nature of creativity by comparing groups of creative vs. non-creative individuals, and investigations concerned with the effect of various types of training on creativity.

In investigating the nature of creativity, a quasi-experimental procedure has been to compare groups of individuals such as architects, writers, and artists who are known to be creative, with a group of other professionals, such as businessmen, who were not known for creative output (MacKinnon, 1960). Also comparisons have been made between workers in a given field, such as artists, etc., who are recognized as more creative with those regarded as less creative within the occupation group (Hammer, 1961).

The second type of experiment, that concerned with the effects of different kinds of training upon creativity, has focused on special exercises, for example, training in giving unusual word associations (Maltzman, 1958). Tests of creative abilities are usually administered both before and after training to the experimental and control groups.

In spite of the above research, there have been few experiments designed to determine what characteristics of the environment foster creative functioning. This is particularly unfortunate since a number of theories have arisen in recent years stating specific conditions, other than training techniques which are thought to be facilitating or inhibiting for the creative worker. Among these theories, the conflicting views of Freud (1949) and Rogers (1959) stand out. The major controversy between these two theories concerns the impact of emotional conflicts upon creative activity. The purpose of the present research was to compare Freud's position, which views conflict as facilitative to creative activity, to that of Rogers, who feels that conflict impairs creativity. A state of sexual conflict was introduced to one group of subjects while an equivalent group was not placed in a state of conflict. Three standardized creativity measures were administered to subjects in each group. It was hypothesized that superior creative performance on the part of conflicted subjects would constitute support for Freudian or orthodox psychoanalytic theory. Conversely, inferior performance on the part of the conflict group would provide support for the Rogerian position.

Theoretical Statements Regarding Conflict  
and Its Relation to Creativity

Freudian Positions

For Freud, creativity had its genesis in conflict. The unconscious forces motivating creative activity were parallel to the unconscious forces motivating the neurotic activity. He felt the function of creative behavior was to discharge pent-up emotion resulting from conflict until a tolerable affective level is reached. Freud (1935) believed that the artist's main conflicts stem from the fact that, although he desires honor, power, riches, and sexual gratification, he lacks the means of achieving gratification of these needs. Presumably there are three means of adapting to conflict resulting from non gratification of these needs: (1) powerful diversions of interest (hobbies, etc.), (2) substitutive gratifications (i.e., one may overeat if sexually frustrated), and (3) the use of intoxicating substances (Freud, 1958). Creativity may constitute a form of sublimation, which transfers instinctual desires into an activity (e.g. painting) that is more acceptable. Through sublimating in the form of creativity, it is also felt that the artist is able to elaborate his daydreams and express unconscious material.

A majority of writers seem to support the Freudian contention that conflict enhances the creative process. Eissler (1961) stresses the importance of conflict in the generation of creativity. In analyzing the life and work of Leonardo da Vinci, Eissler emphasized the role of unconscious conflicts in da Vinci's artistic endeavors. Eissler felt strongly about the facilitating role of psychopathology on creative arts. (Presumably, psychopathology has its basis in conflict.)

It is no longer disputed that in the study of genius a surprisingly large amount of psychopathology is encountered . . . . Observation of the genius suggests the possibility that psychopathology is indispensable to the highest achievements of certain kinds (1961, p. 96).

Eissler (1967) further propounds the thesis of an unconscious, conflictual

source of creativity by referring to Goethe's famous novel Werther, in which the hero shoots himself. Goethe himself had tried on many occasions to commit suicide by stabbing himself. Eissler concludes that only somebody who had repeatedly gone through the throes of preparing for suicide could have presented it so overwhelmingly as Goethe.

Julian Stamm (1967) follows a line similar to Freud and Eissler by contending that the motives for creativity and the creative process derive their strength from primitive, unneutralized, aggressive, and libidinal derivatives. After having observed the behavior of several creative people, Stamm came to feel that the urge to create springs from unresolved unconscious conflicts. He states:

It is the unconscious conflict that seems to provide the drive-cathexis so vital for the completion of creative work in individuals inherently endowed with specific sensory modalities. The reverse is also true: after periods of frenetic creative activity, one often notices a relaxation of tension in the artist, and a concurrent ebb in creative production. Economically then, there appears to be an optimum range of tension within which the creative individual works best (1967, p. 82). Creative expression is, motivated by conflict, invariably driven by instinctual tension, nurtured fortuitously by the inheritance of hyperacute sensory modalities which have been developed into ingrained attributes or tools through habit. Creative expression can thus become a vehicle for the discharge of tension on all levels, subserving instinctual demands, secondary autonomous functions, defense functions, and both the reality principle and the pleasure principle (p. 94).

Slochower (1967) also agrees with the point of view expressed by Freud. He concludes:

The urge for creativity presupposes 'disease' and dissatisfaction with what is, entails a desire to reshape and transcend . . . we also know that both Faust and his creator show evidence of neurotic conflicts (p. 81).

Kris (1958), one of the most influential of current analytic

theorists, is also in agreement with the Freudian viewpoint. In his writings he discusses conflict directly, and concludes:

It seems that in every process of creation the gradual emergence from conflict plays its part. It may start out in serving a fantasy of the individual, in meeting an individual's needs, but to the extent that it emerges from conflict, certain properties may be acquired which are akin to, and some of them identical with gift or skill (1953, p. 334).

Greenacre (1957) also emphasizes the role that conflict plays in fostering creative output. She feels that in some cases the performance of creative child prodigies is the result of neurotic conflicts, and that the development of special achievement occurs on a somewhat compulsive basis as a part of an effort to overcome a masturbation addiction which is heavily charged with anal problems. He emphasizes the point that creative activity is highly libidinized and that without this libidinal charge, there would be no creative output.

Langfeld (1925) also agrees with Freud and his followers as to the importance of conflict in artistic production. He feels that, through his art, the artist "integrates his impulses into effective behavior." The artist expresses his inner life in an external form, and in doing so overcomes the inhibitions that stood in his way in practical living. In addition, the artist is felt to provide others with a means through which they may find relief for their conflicts as they are able to express their own emotions in the process of viewing the work of art.

Bergler (1948) is another writer in sympathy with Freudian views. He feels the artist's self cure from pressing inner conflict takes the form of a sublimation. He also subscribes to a definite relationship between creativity and psychopathology. In this regard he states:

I have never encountered a normal writer, neither in my office, nor in private life, nor in studying the life histories of writers. I doubt that anyone ever has met such a phenomenon as a 'normal' writer. Normal people just do not feel impelled to write . . . . In nearly twenty years of psychoanalytic practice, I have seen a great number of neurotics, in my office and outside. I admit that the most repressed and pitiful lot has been that of writers. On this score no other neurotic can beat them (1948, p. 247).

Fenichel (1945), a well-known psychoanalyst, in discussing whether artists should be analyzed or not, concludes:

Artists are at times afraid that their creativity will be lost if their unconscious conflicts, the source of their creativeness are analyzed . . . . In a minority of artists, neurosis and work seem to be so closely interwoven that it seems impossible to remove the one without impairing the other (1945, p. 703).

#### Psychoanalytic Approaches Opposed to Freud's Viewpoints

A number of psychiatrists and psychologists oppose the Freudian explanation of creativity, particularly Freud's emphasis on unconscious determinants and the role of conflict impairs rather than facilitates creative activity.

Robert Waelder (1958), in his Freud Anniversary address before the New York Psychoanalytic Society, stated that the unconscious of the artist is of no greater importance in his work than the unconscious in ours. Kubie places major emphasis on the importance of preconscious ego mechanisms in the creative process. He believes that the effect of the unconscious is only to distort and inhibit creativity in general and that the main aim of the therapist should be to unshackle creative people from their unconscious conflicts. He states:

It has been my thesis that a type of mental function . . . . , the preconscious system, is the essential implement of all creative activity, and that unless preconscious processes can flow freely there can be no true creativity (1967, p. 90).

And in respect to the role of the unconscious, he concludes:

No one need fear that getting well will cause an atrophy of his creative drive. This illusory fear rests on the erroneous assumption that it is that which is unconscious in us which makes us creative, whereas in fact the unconscious is our strait-jacket, rendering us as stereotyped and as sterile and as repetitive as is the neurosis itself . . . . The goal to seek is to free preconscious processes from the distortions interposed by unconscious processes . . . . The unconscious can spur it on. The conscious can criticize and correct and evaluate. But creativity is a product of preconscious activity (p. 90).

Horney (1950) writes that a man can create only to the extent to which his real self is alive, giving him the capacity for deep personal experiences (indicating a lack of conflict and distortion) and the spontaneous desire, as well as the ability to express them. Martin (1952) also feels that severe inner conflicts and the attempts to avoid facing them impair the capacity for insight, creativity, and growth.

Wenkart (1955) writes that being human, an artist may well have some neurotic difficulty, but if he does succeed in creative work he is at least putting up a good fight against his neurosis. He feels that a person creates with the residue of energy that has not been consumed by his conflict, rather than with the neurotic part of himself. If an artist can create there must be, as it were, islands of health in him.

William Phillips (1957) in the introduction to Art and Psychoanalysis disagrees with the Freudian explanation of creativity and concludes that neurosis and presumably conflict impairs creative activity:

Freud's few attempts to explain the nature of art are not very impressive . . . . Perhaps the least impressive of Freud's observations was that it was the desire for fame, power, and

the love of women that lay behind the creative will of the writer . . . . Any total approach to art that sees the creative gift or process as a form of neurosis is bound to produce a lopsided and absurd theory (1957, p. 16).

Lionel Trilling (1957) in an article entitled Art and Neurosis also takes issue with the position that it is neurosis itself which gives rise to creative output. He feels that the artist's genius can no more be defined in terms of neurosis than can his power of walking and talking, or his sexuality. He writes:

The use to which the artist puts his power, or the manner and style of his power, may be discussed with reference to his particular neurosis, and so may such matters as the untimely diminution or cessation of its exercise. But its essence is irreducible. It is, as we say, a gift (1957, p. 518).

Trilling goes on to state that it is the artist's state of health that enables him to function creatively.

We are all ill: but even a universal sickness implies an idea of health. Of the artist we must say that whatever elements of neurosis he has in common with his fellow mortals, the one part of him that is healthy, by any conceivable definition of health, is that which gives him the power to conceive, to plan, to work, and to bring his work to a conclusion (p. 518).

May (1959) disagrees with psychoanalytic theories of creativity, feeling that creativity is not the product of a neurosis. He writes:

Psychoanalytic theories about creativity have two characteristics. First they are reductive. That is, they reduce creativity to some other process. Secondly, they generally specifically make it an expression of neurotic patterns. The usual definition of creativity in psychoanalytic circles is regression in the service of the ego. The term 'regression' immediately indicates the reductive approach. I should like to disagree firmly with the implication that creativity is to be understood by reducing it to some other process, or that it is essentially a neurotic process. Certainly, creativity is associated with neurotic problems in our particular culture--Van Gogh was psychotic, Gauguin seems to have been what we would call schizoid, and obviously creativity (and originality) are associated with persons who do not fit into the culture. But this does not at all mean that the creativity itself is the product of the neurosis or illness. The above association of creativity with

neurosis led to the dilemma which all of us have at one time argued, namely, if by psychoanalysis we cured the artists of their neuroses, would they no longer create? This false dilemma, as well as many others, arises from the reductive theories. Furthermore, if we create out of some transfer of affect or drive, as implied in sublimation, or as a by-product of an endeavor to accomplish something else, as in compensation, does not our very creative act then have only a pseudo value? We must indeed take a strong stand against the implications, however they may creep in, that talent is a disease and creativity a neurosis (1959, p. 56).

The critics of the Freudian explanation of creativity discussed above, although critical of Freud's views, present little in the way of alternative explanations of the creative process. The psychoanalysts and psychologists to be presented in the following paragraphs, while also critical of Freud's views regarding the nature of the creative process, present their own formulations regarding creative functioning.

#### Non-analytic Theories of Creativity

Rogers (1959) is emphatic in his statements that creativity is facilitated by adjustment. When a person is mentally ill and experiencing severe conflict, his creativity is felt to be hampered.

Rogers (1959) defines the creative process as the emergence in action of a novel relational product, growing out of the uniqueness of the individual on the one hand, and the materials, events, people, or circumstances of his life in the other. The motive for creativity is seen to be man's tendency to actualize himself, to become that which his potentialities permit. Conflict is felt to impair rather than facilitate creativity.

The mainspring of creativity appears to be the same tendency which we discover so deeply as the curative force in psychotherapy --man's tendency to actualize himself, to become his potentialities. By this I mean the directional trend which is evident in all organic and human life--the urge to expand, extend, develop, mature--the

tendency to express and activate all the capacities of the organism, to the extent that such activation enhances the organism, or the self. This tendency may become deeply buried under layer after layer of encrusted psychological defenses; it may be hidden behind elaborate facades which deny its existence; it is my belief however, based on my experience, that it exists in every individual and awaits only the proper conditions to be released and expressed. It is this tendency which is the primary motivation for creativity as the organism forms new relationships to the environment in its endeavor most fully to be itself (1959, p. 72).

Rogers lists three conditions within the individual which are closely associated with creative activity. These are: (1) openness to experience (extensionality), (2) internal locus of evaluation, and (3) ability to toy with elements and concepts.

According to Rogers conflict impairs one's ability to remain open to his experience, since in response to conflict situations, individuals deny to awareness certain aspects of their experience. According to Rogers creativity will be reduced to the extent that the individual is denying to awareness large areas of his experience. To the degree that the individual is open to all aspects of his experience, then the novel products of his interaction with his environment will tend to be constructive.

In a person who is open to experience each stimulus is freely relayed through the nervous system, without being distorted by any process of defensiveness. Whether the stimulus originates in the environment, in the impact of form, color, or sound on the sensory nerves, or whether it originates in the viscera, or as a memory trace in the central nervous system, it is available to awareness. This means that instead of perceiving in predetermined categories ("trees are green," "College education is good," "modern art is silly") the individual is aware of this existential moment as it is, thus being alive to many experiences which fall outside the usual categories (this tree is lavender; this college education is damaging; this modern sculpture has a powerful effect on me) . . . . This last suggests another way of describing openness to experience. It means lack of rigidity and permeability of boundaries in concepts, beliefs, perceptions, and hypotheses. It means a tolerance for ambiguity where

ambiguity exists. It means the ability to receive much conflicting information without closure upon the situation (1961, p. 115).

A fundamental condition of creativity is that the source or locus of evaluative judgment is internal. The value of his product is, for the creative person, established not by the praise or criticism of others, but by himself. By establishing an internal locus of evaluation the artist is able to transcend forms of criticism which negate the artistic value of so-called futuristic works of art.

The ability to "play spontaneously with ideas, colors, shapes, relationships--to juggle elements into impossible juxtapositions, to shape real hypotheses, to express the ridiculous" is felt to be vital (Rogers, p. 355). This ability to toy with concepts is also felt to be a necessary part of the creative act by Getzels and Jackson (1962), and Snyder (1959). These theorists suggest that conflict, to the degree that it prevents one from spontaneously toying with concepts, also impairs creativity.

A great deal of experimental work dealing with the effect of anxiety on learning and task performance has been carried on by Kenneth Spence (1958), a drive theorist. Since anxiety typically occurs while organisms are experiencing conflict, a discussion of Spence's theory seems relevant to the present discussion. Spence conceives of anxiety as an acquired drive which has the capacity to generally energize the organism. Spence feels that anxiety energizes or strengthens each of the habits in the hierarchy in proportion to the initial strength of the habit. Thus where easy responses are required, i.e., those that are dominant in the response hierarchy, anxiety facilitates performance. However, where non-dominant, more difficult (original) responses are required, the presence

of anxiety tends to impair performance.

A number of educators feel that conflict impairs creative activity in the classroom. A. S. Neill in his book Summerhill discusses a number of instances with children where conflict inhibited behavior, e.g., curiosity, motivation, etc., typically associated with creative behavior. McReynolds (1961) has demonstrated empirically that conflict inhibits a child's natural tendencies to explore his environment as well as his creative behavior. Clark Moustakas, in his book, The Teacher and The Child (1956), has provided many examples of situations where attempts were made to minimize conflict in the classroom. In those cases where non-conflict environments were established, creative behavior on the student's part flourished. There have also been research investigations of the outcomes of studies centered on non-conflict producing types of teaching environments (Jackson, 1957). These studies indicate that creative behavior is facilitated in a safe non-threatening classroom environment. Significant gains in personal adjustment and self-initiated extra-curricular learning have also been demonstrated.

The disagreements between those who support the Freudian explanation of creativity, where conflict is assumed to be a necessary condition for creative functioning, and men like May and Rogers who take the position that conflict impairs creative functioning have not been subjected to empirical test. The psychoanalytic approach to the study of creativity has been to make direct observations of creative individuals and their creative endeavors. From the point of view of the experimental psychologist, however, results of these studies should not be regarded as producing more than hypotheses that are promising for further investigation. The approach raises many questions but has not provided

empirical answers. The lack of experimental sophistication is revealed in the psychoanalytic writings on creativity. For example, Eissler (1935) feels that the indispensable share of psychopathology in the creation of original values of high quality can be objectively proven only in "individual instances," and similarly, William Phillips (1957) feels that the "only way" to settle the question of whether neurosis and conflict contribute to creativity in a scientific way would be to tabulate neurosis to determine whether their neuroses are different in kind or degree. These psychoanalytically oriented theorists have appeared disinclined toward methods by which this problem might be dealt with experimentally.

The following studies are the only ones found in the literature which attempt to validate Freud's theory of creativity by empirical investigation, although there is no attempt to deal with the question of conflict in its relation to creativity.

White (1939) asked the questions: "Is creativity characterized by mental disorder?" and "are there any kinds of mental achievement which tend to be associated with pathological mental conditions?" He found by virtue of biographical material and statistical procedures that artists, poets, and men of letters tended to be more psychopathic than scientists, soldiers, and sailors. On the basis of these observations he suggests that the poet or novelist thwarted or conflicted in the external world may take refuge in his inner world of feeling and imagination. Such a finding would tend to support Freudian explanations of creativity. However, the data consists solely of subjective impressions of the author and to that extent lacks a definitive quality.

Munsterburg (1953) in another study tested seven hypotheses

derived from psychoanalytic theory and empirical research, using 30 outstanding art students and a control group of 30 non-art majors. The hypotheses were: (1) More artists than non-artists have quiet, introverted personalities and suffer from intense guilt feelings, (2) artists are less likely than non-artists to have overt aggressive tendencies, (3) acceptance and approval of their work is more important to the artists than personal acceptance, (4) artists are more willing than non-artists to sacrifice material pleasures to produce their works, (5) artists place lesser value on superficial social relations than non-artists, (6) more non-artists are willing to submit to parental domination and to the demands of society in order to achieve personal success, (7) artists have greater conflict than non-artists. The subjects studied were tested with the TAT and a questionnaire designed to obtain information on Ss' interest and participation in artistic activities, and as was predicted, more artists than non-artists had quiet, introverted personalities.

Getzels and Jackson in an experimental study of high and average creative people found evidence in support of Freud's hypothesis that creative behavior "is a continuation of, and substitution for, the play of childhood." They conclude:

Our own illustrations from the stories and drawings of the high creatives provide examples of their toying with ideas . . . It may be an exaggeration to say that our highly creative students evidenced an ability to regress to more primary-process perceptions of their world and to experience the quality of affect that accompanies a child's discoveries (1963, p. 99).

There have been a number of attempts in recent years, Metz (1961), and Hadley (1965), to investigate the effect of anxiety on creative functioning. Both of these investigators concluded that stressful conditions impair creativity. Metz (1961) attempted to examine the effects

of anxiety upon creativity. He found that lower levels of anxiety, as measured by the Taylor Manifest Anxiety Scale, were associated with better performance on Guilford's creativity tasks. Hadley (1965) administered a number of creativity tasks to one experimental group under conditions designed to raise anxiety, and to the other under conditions designed to reduce anxiety. The results indicated that performance on creativity tasks is, in general, significantly better under relaxed than anxious conditions.

None of these investigators have attempted to test Freud's hypothesis that creative functioning is the result of a conflictual state since the effects of anxiety or stress, and not conflict, were measured. Another difference between the present investigation and the studies cited above is that, in this study, conflict will be experimentally introduced. The purpose of the present research was to compare Freud's position on conflict as facilitative to creative activity to that of Rogers who feels that conflict impairs creative activity. A state of sexual conflict was introduced to one group of subjects while leaving a control group free from such conflict. Based on psychoanalytic theory it was predicted that the sexually conflicted group would produce qualitatively better creative output on creativity tests than an equivalent, but non-conflicted, control group. On the basis of Rogerian theory it was predicted that the non-conflicted group would perform more creatively on tests designed to measure behavior of this type.

## CHAPTER II

### PILOT STUDY

Before the dissertation study could be undertaken, it was necessary to demonstrate that an actual state of sexual conflict could be induced. This was the purpose of the pilot study. It was assumed that highly religious male Ss could be placed in a state of sexual conflict if required to decide whether or not to look at pictures of nude women. Presumably their desire to look would be in conflict with their religious attitudes. The control group would be required to make a decision whether they wanted to look at the Norman Transcript, the daily newspaper for Norman, Oklahoma. After the instructions designed to establish conflict were read and before the actual decision to look at the pictures was made, Ss performed three standardized creativity tasks. A skin conductance measure designed to assess physiological arousal was obtained on each S at the beginning of the session and throughout the session. It was assumed that heightened states of physiological arousal on the part of the experimental subjects would accompany any conflict experienced by them and the absence of arousal would be interpreted as indicating a lack of conflict. At the end of the session and after the Ss made their decisions to look or not to look at the nude pictures, they were asked to fill out a 7-point Likert scale (see Appendix A), indicating whether or

not they felt in conflict during the session, and if so, at what point it began.

The following hypotheses were stated for the pilot study:

1. Ss having to make the choice of whether or not they wanted to see the nude females (experimental group) would have significantly greater skin conductance readings than the control group.

2. The experimental group would report greater conflict than controls on the 1-7-point Likert scale.

#### Method

Subjects. Fourteen highly religious, white, males between 18 and 22 years of age served as Ss. They were drawn from 4 classes in psychology at a large state university in the Southwest. The degree of religiosity was established by responses to a religious questionnaire (Wrightsman, 1961). The questionnaire asked the following questions:

1. How often do you attend religious services.
  - a. once a week or more
  - b. several times per month
  - c. only in times of crisis
  - d. never
2. How often do you pray.
  - a. daily
  - b. several times per month
  - c. only in times of crisis or death
  - d. never
3. How often do you read the Bible.
  - a. daily
  - b. several times per month
  - c. only in times of crisis or death
  - d. never
4. How many years Ss attended church or Sunday school services.
  - a. more than 10 years
  - b. 5-10 years
  - c. 1-5 years
  - d. never

On each question choice "a" was worth 3 points, "b" 2 points, "c" 1 point and "d" zero points. Only Ss with a cumulative religious score of 9 or above were used in the present study. Ss were divided equally and without bias into the experimental and control groups. The mean religious score for the control group was 9.8 and for the experimental group was 9.2.

Instruments. The apparatus to measure skin conductance was designed by Dr. Robert Edelberg at the University of Oklahoma Medical Center. It used a direct reading constant voltage conductance meter in which one volt was applied to two skin sites on the tips of the Ss third and fourth fingers. Current was measured with a transistorized amplifier and ammeter.

Procedure. Ss were seen individually. As each S entered the room, he was connected to the conductance apparatus and then told to relax for a period of 10 minutes. The rest period was used to establish a basal reading. After the 10-minute rest period ended, the following instructions were read to the "conflict group" while the apparatus was still attached to each S.

You will have some tasks to perform. Before you begin these tasks, I will give you an envelope containing pictures of nude women (E gives S envelope). You can look at these pictures when you finish the tasks if you want to. The decision to look at these pictures is solely up to you. Are there any questions?

Identical instructions were read to the control group except that the words "Norman Transcript" were substituted for "pictures of nude women."

Conductance measures were taken during the following periods:

- a) Basal--at the end of the 10-minute rest period
- b) Beginning of instructions designed to establish a state of conflict

- c) Middle of instructions (At the point where words "pictures of nude women" were introduced).
- d) End of instructions
- e) Circles task--Beginning, middle, and end
- f) Consequences task--Beginning, middle, and end
- g) Alternate Uses task--Beginning, middle, and end

Upon completion of the tasks, the 1-7 Likert type conflict scale was administered in order to measure the extent to which Ss felt they were conflicted and at what point they experienced the greatest conflict.

### Results

t tests were estimated to determine if there were significant differences between the two groups on skin conductance at the basal level. The mean for the experimental group was 14.17, while the mean for the control group was 12.96, the differences being non-significant, ( $t = .33$ ,  $df = 12$ ,  $p = NS$ ) indicating that there were no differences in skin conductance readings during this period of the experiment.

t tests were then estimated to determine if any differences existed in skin conductance at the beginning of instruction. The readings taken at the beginning of instructions was subtracted from the basal reading for each group and the resultant scores compared. The mean for the experimental group was 1.16 while the mean for the control group was .91, the differences being non-significant ( $t = .27$ ,  $df = 12$ ,  $p = NF$ ) indicating that there were no differences in skin conductances at the beginning of the instruction period.

Next t tests were estimated to determine if the experimental group had significantly higher conductance readings at the point in the instructions where they were informed as to the necessity of making a choice of whether or not to look at the nude pictures at the end of the experiment. Again the readings taken at this point (middle of

instructions) were subtracted from the basal reading and the different scores were then compared for both groups. The mean conductance score for the experimental group was 6.02, while the mean for the control group was 1.50, the differences being highly significant ( $t = 2.17$ ,  $df = 12$ ,  $p < .01$ ) indicating that skin conductance readings for the experimental group were higher at the point in the instruction period where the words "nude females" were mentioned.  $t$  tests were then estimated to determine if these differences persisted at the end of the instruction period. The mean for the experimental group at the end of the instruction period was 5.7, while the mean for the control group was 1.62, the differences being significant ( $t = 2.27$ ,  $df = 12$ ,  $p < .05$ ).

The differences for the readings obtained at the end of each creativity task were then compared. Although the mean differences were in the expected direction with the experimental group showing higher mean conductance readings on each task, none of the readings were statistically significant.

On the Likert scale, six out of seven Ss in the experimental group indicated that they experienced conflict (score = 6 on 1-7 scale indicating moderate conflict) as a result of the decision to view or not to view nudes. The one remaining person in the experimental group indicated he did not experience conflict. Six out of seven Ss in the control group indicated a feeling of conflict (score = 2 on scale indicating moderate lack of conflict). The one remaining person indicated he experienced conflict. A sign test was applied to this data and found to be significant at the .001 level.

### Discussion

It was assumed that heightened states of physiological arousal on the part of the experimental subjects would accompany any conflict experienced by them and that the absence of arousal would lessen the probability that conflict existed. Thus, in addition to the psychometric evidence provided by the conflict scale, a measure of physiological arousal in the form of conductance readings was obtained. This was felt to provide an increment of evidence in support for the presence of conflict.

As was predicted, arousal levels were higher for the experimental than for the control subjects during the middle and end of instructions. These results, taken alone, do not necessarily indicate that conflict existed since arousal (as opposed to conflict) could accompany an Ss' expectancy of viewing nude pictures. However, the absence of arousal would have left serious questions regarding the presence of conflict. The fact that the experimental subjects indicated that they felt in conflict during the session, and more specifically, at that point where they were informed of their having to make a choice to look at the pictures, combined with the arousal data, suggests that a state of sexual conflict can be induced in a group of highly religious Ss. Further evidence in support of this contention is revealed when one analyzes the choices made at the end of each session by Ss in both groups. Only one of the seven Ss in the experimental group asked to look inside the envelope to see the nude pictures, while five of the seven Ss asked to look at the Norman Transcript. Ss in the experimental group appeared clinically to be perplexed and anxious (e.g., revealed facial grimaces and at

times blushed, over having to make this decision) while the Ss in the  
- control group manifested no such signs.

### CHAPTER III

#### METHOD

##### Subjects

Sixty highly religious white males between 18 and 22 years of age served as Ss in the main study. They were drawn from 10 classes in psychology at a large state university in the Southwest. The degree of religiosity was established by responses to the same religious questionnaire utilized in the pilot study. The mean for all the Ss in the 10 classes was 5.5. Only Ss with a cumulative religious score of 9 or above were used in the present study. These Ss were divided equally and without bias into the experimental and control groups. The mean age for the experimental group was 20.5 and for the control group was 19.4.

##### Instruments

Circles Test. The Circles Test (Seeman, 1963) consists of a page containing 15 empty circles the size of a quarter laid out in 5 rows of 3 circles each (see Appendix F). These circles were to be used as a basis for Ss drawings. The Circles Test was scored independently for productivity, originality, and elaboration. The productivity measure consisted of the number of different designs which were drawn. Credit was given for originality of an item was mentioned very rarely (5% of the time or less by Ss in the present sample). The elaboration score is

a measure of the detail of the drawing provided in both the inside and outside of the circles, and is the only subtest possessing a degree of subjectivity in its scoring. The extent of elaboration was rated on a 5-point scale, and there is a previously reported interrater reliability of .85 (Collins, 1963) for scoring these dimensions. There have been no direct studies of the validity of this instrument. However, in a previous study (Duncan, 1966) this instrument failed to discriminate between groups of "Integrated" Ss as well as between overachievers and average achievers in a study by Wright (1964).

Consequences Test. The Consequences Test (Guilford, 1959) is a measure of the ability to produce remote or uncommon responses (see Appendix B). In this test each of the separately timed items was framed as a question, beginning "What would be the results if . . . ." The content of the items was chosen so as to bring the problems within the common knowledge of most individuals growing up in the United States. In scoring the test, the responses were classified as being either obvious or remote. In the past the alternate forms reliability coefficient for the obvious score has been .87 and for the remote score .67. The previously reported construct validity for the obvious score is .62 and .40 for the remote score. There have been no estimates of interrater reliabilities for either score. Responses were scored in accordance with a manual of acceptable responses provided by the authors. The number of obvious responses are felt to provide a score for the factor of ideational fluency (Guilford, 1959). An obvious response was one that indicates an immediate result, in terms of a cessation of usual functions, or absence of commonly associated things, with less awareness of social, economic, or cultural ramifications. For example, an obvious

response to the question "What would happen if all humans lost the ability to reproduce" would be "the species would eventually die out." Thus, the number of remote responses provided a score for originality. A remote response is one evidencing a consideration of changes more distant, temporally or geographically, or indicating a specific substitute, a new system, or some other fairly specific way of adjusting to the changed situation. Responses merely indicating the need for adjustment or providing relatively vague solutions were considered obvious.

Alternate Uses Test. This test developed by Guilford (1959) is a revised and improved form of the Unusual Uses Test which was designed as a measure of a hypothesized factor of flexibility of thinking. The test was divided into three parts with three items per part. Each item presented the name of a well-known object and a statement of its most common use. The examinee was to list as many as six other less common uses.

The Alternate Uses Test was scored for both productivity and originality. The productivity score was simply the number of acceptable alternate uses provided by each S. Credit was given for an original response if it was mentioned no more than 3 times by all the Ss. This test presents previously reported reliability estimates (Guilford, 1959) from .68 to .81 and a reported validity of .51 based on a constant validity study performed by Guilford (1959).

All of the tests described above lie on a productivity-originality continuum with Alternate Uses, Original Alternate Uses, Seeman's Originality measure and Remote Consequences representing mainly measures of originality and Seeman's productivity and elaboration measures as well as Obvious Consequences primarily representing productivity measures.

### Procedure

Procedures identical to those used in the pilot study were utilized in the present study to establish a state of sexual conflict in the experimental group, as well as a non-conflict state in the control group. However, in the present study no skin conductance measures were taken nor was a Likert conflict scale administered.

Ss were seen in groups of two in a large room. Before beginning the tasks, Ss in the experimental condition (conflict group) were read the following instructions:

You will have some tasks to perform. Before you begin these tasks, I will give you an envelope containing pictures of nude women (E gives S envelope). You may look at these pictures if you want to after you finish the tasks. The decision to look at these pictures is solely up to you. Are there any questions?

Identical instructions were read to the control group (non-conflict group) except that the words Norman Transcript (the Norman, Oklahoma daily newspaper) were substituted for "pictures of nude women." After the instructions were read, the Circles Test, Consequences Test, and Alternate Uses Test were administered consecutively. After each S finished the last task, he was given the opportunity to look inside an envelope containing pictures of nude females.

The following instructions were given for the Consequences Test:

This is a test of your ability to think of a large number of ideas in connection with a new and unusual situation. There will be ten different situations each on a separate page. Four examples will be included for each item. You will be given two minutes on each page to write down other possible results. Write as many different consequences or possible results of the change as you can. Your answers need not be complete sentences. Your score will be the total number of different consequences that you write in the time given you.

The following instructions were given for the Alternate Uses

## Test:

In this test, you will be asked to consider some common objects. Each object has a common use, which will be stated. You are to list as many as six other uses for which the object or parts of the object could serve. Do not spend too much time on any one item. Write down those uses that occur to you and go on to the others in the same part. You may return to the incomplete items in a part if time for that part permits. There are three parts to this test, with three items per part. You will have four minutes for each part. If you have any questions, ask them now.

The following instructions were given for the Circles Test:

In front of you are a number of empty circles which you are to use as a basis for drawings. Do not be afraid to draw whatever enters your mind. This is not a test of artistic ability. Label whatever you draw.

## CHAPTER IV

### RESULTS

Comparisons were made between the experimental and control groups on: (1) background measures of cumulative grade point average to determine if differences existed in level of intellectual functioning, (2) creativity scores as defined in terms of original responses on each test and (3) other measures (productivity, elaboration) contained within the creativity measures.

Although the Ss were chosen randomly, the control group and experimental group were compared to determine if differences in level of intellectual functioning, as measured by grade point average, existed between the groups. t tests performed on the cumulative grade point averages of the two groups were not significant ( $t = 1.33$ ,  $df = 50$ ,  $p = NS$ ). It was therefore assumed that the groups were essentially equivalent in terms of intellectual functioning as reflected in their college grades. The means and standard deviations for experimental and control groups on GPA are shown in Table 1.

TABLE 1

t TEST COMPARING GRADE POINT AVERAGES FOR  
EXPERIMENTAL AND CONTROL GROUPS

| Group        | Mean | Standard<br>Deviation |
|--------------|------|-----------------------|
| Experimental | 2.27 | .63                   |
| Control      | 2.23 | .64                   |

On the Alternate Uses Test the control group scored significantly higher on both the obvious uses ( $t = 2.07$ ,  $df = 58$ ,  $p < .01$ ) and the number of original responses ( $t = 2.52$ ,  $df = 58$ ,  $p < .01$ ). These results indicate that lack of conflict facilitated response on these two measures of originality. Means and standard deviations for the experimental and control groups on the Alternate Uses Test are shown in Table 2.

TABLE 2

MEANS AND STANDARD DEVIATIONS  
FOR ALTERNATE USE TASK

| Measures                        | Control |      | Experimental |      |
|---------------------------------|---------|------|--------------|------|
|                                 | Mean    | SD   | Mean         | SD   |
| Original Uses<br>(Originality)  | 6.60    | 2.92 | 4.66         | 3.29 |
| Alternate Uses<br>(Originality) | 18.90   | 4.40 | 16.00        | 6.14 |

No significant differences were found between experimental and control groups on obvious consequences ( $t = .27$ ,  $df = 58$ ,  $p = NS$ ). However, on remote consequences, the control group tended to give more responses than the experimental group ( $t = 1.76$ ,  $df = 58$ , sig. at .10 but not .05). Although this result does not reach standards of statistical significance for a 2-tailed  $t$  test, it would be significant for a 1-tailed  $t$ . The trend suggests that creation of a conflict situation does not affect productivity of obvious responses, but it does tend to restrict the  $S'$  ability to produce remote consequences in comparison to  $S$ s in a conflict-free situation. Means and Standard deviations for both obvious and remote scores on the consequences test are shown in Table 3.

TABLE 3  
MEANS AND STANDARD DEVIATIONS  
FOR CONSEQUENCES TEST

| Measures                               | Control |      | Experimental |      |
|----------------------------------------|---------|------|--------------|------|
|                                        | Mean    | SD   | Mean         | SD   |
| Obvious Consequences<br>(Productivity) | 27.83   | 7.71 | 27.23        | 8.75 |
| Remote Consequences<br>(Originality)   | 12.36   | 4.87 | 10.10        | 4.89 |

The differences between experimental and control groups for each of the three variables, productivity, elaboration, and originality from Seeman's (1963) Circles Test did not reach statistical significance. These data failed to indicate any effect regarding the presence or absence of conflict. Means and standard deviations for these three

variables are shown in Table 4.

TABLE 4  
MEANS AND STANDARD DEVIATIONS  
FOR CIRCLES TEST

| Measures     | Control |      | Experimental |      |
|--------------|---------|------|--------------|------|
|              | Mean    | SD   | Mean         | SD   |
| Productivity | 14.90   | 5.47 | 16           | 5.88 |
| Elaboration  | 2.33    | .48  | 2.16         | .47  |
| Originality  | 3.97    | .22  | 3.96         | .24  |

Data from three potential experimental Ss had to be thrown out and these Ss replaced since they either would not or could not follow the instructions on the Alternate Uses Test. None of the control Ss had to be eliminated.

## CHAPTER V

### DISCUSSION

First, it is felt that a state of conflict was induced in experimental Ss on the basis of the preliminary investigation in which they indicated feelings of greater conflict and yielded higher levels of arousal on a GSR measure after receiving instructions which required a choice of whether to view pictures of nudes. For this reason it is felt that the present study is measuring the effects of conflict on creative activity.

The results of this investigation offer support for the Rogerian theory of creativity which postulates that conflicted individuals tend to behave in an inhibited and constrictive manner, and as a result, their creative expression is impaired.

The creativity measures utilized in this study lie on a productivity-originality continuum with obvious consequences, and Seeman's productivity and elaboration scores representing measures of productivity. Acceptable solution on alternate uses, original uses, remote consequences, and Seeman's originality measure required greater degrees of originality. Although there is a productivity component to alternate uses, it is felt to be more a measure of originality than productivity. To think of alternative uses for everyday objects, e.g., to think of an automobile tire as a raft required that an S be able to go

beyond fixed ways of perceiving things. To provide original unique uses for everyday objects, e.g., to think of an automobile tire as a football practice dummy, required even greater flexibility of thought. The greatest degree of originality of response was required on the Remote Consequences test. In order to provide remote consequences for ambiguous novel situations required that the S be extremely creative in his perceptions and descriptions of interpersonal and object relationships. This measure required an S be aware of, and thoroughly consider, the many contingencies which exist in relation to any given situation. It also required that the individual be able to conceptualize events occurring in the future in an appropriate manner. The lack of significance obtained on any of Seeman's tests suggests that these measures are not a valid measure of creativity.

The results of the present study suggest that conflict adversely affected performance on tasks measuring originality but did not adversely affect performance on tasks measuring productivity. In this study the results on the Remote Consequences task were not significant at the .05 level for a 2-tailed test but were significant at between the .10 and .05 levels. Although these results were not significant in terms of the requirements of the present study (where a 2-tailed test of significance was employed), they would be significant in any future study where a directional hypothesis in agreement with Rogerian theory was provided.

To explain these results Rogers would suggest that conflict produces defensiveness in an individual's behavior. A defensive individual in the context of Rogers' theory is one who is "unable to remain open to the totality of his experience" and thus would not be expected to do well on tasks requiring an open flexible attitude. To explain in

greater detail, Rogers has described defensiveness as being the organism's response to experiences which are perceived or anticipated as threatening, as incongruent with the individual's existing picture of himself in relation to the world. According to Rogers, in order to preserve organismic integrity, these threatening experiences are temporarily rendered harmless by being distorted in awareness or denied to awareness. Rogers would suggest that creativity will be reduced to the extent that the individual is denying to awareness large areas of experience. To the degree that the individual is open to all aspects of his experience, then — the novel products of his interaction with his environment tend to be creative. If the experimental Ss in the present investigation dealt with their conflict as Rogers would predict, i.e., by preventing or distorting elements of the conflict-laden environment from coming into awareness, then this defensive adaptation would account for their inability to perform as creatively as the non-conflicted subjects.

It was found in this study that conflict differentially effected tasks differing in the degree to which they required original as contrasted with productive responses. To explain the fact that original measures were adversely affected while productivity measures were not, Rogers would suggest that optimal performance on the productivity measures required less in the way of an open-flexible response than performance on the originality measures. Apparently the disruptive effect of conflict was not great enough to adversely inhibit the work of those cognitive and emotional processes involved in the emission of numerous responses (productivity) but was great enough to adversely inhibit the emission of highly original unique responses. The experience of conflict may have prevented the conflicted Ss from in Rogers' terms "going beyond

predetermined categories" and stereotyped ways of looking at things, an approach which the originality measures required for optimal performance. The productivity measures on the other hand did not require such an approach and thus were not as adversely affected by conflict as were the originality measures.

The results of this study agree with those obtained by Metz (1961), Hadley (1965), and Spence (1959), who also found that conflict-like conditions, e.g., stress, anxiety, etc., inhibited the emission of original responses but did not affect productivity measures. These results are dissonant with the views of Freud (1935), Eissler (1961), Stamm (1967), Greenacre (1957), and Fenichel (1945), all of a psychoanalytic persuasion who feel that conflict facilitates creativity.

Although Spence and Rogers both agree that conflict will differentially effect measures of originality and productivity, they differ in their explanation of these results. Spence feels that heightened drives energize or strengthen responses which are dominant in the response hierarchy, i.e., have a high probability of occurring, and impair the emission of non-dominant improbable responses, i.e., responses which have a lesser likelihood of occurring. In the present investigation Spence would suggest that the heightened drive levels associated with the experimental S conflicted state may have increased response interference on the more difficult measures of originality (alternate uses, remote consequences, original uses) where by definition the correct response is less likely to occur, but it did not interfere with performance on the less difficult productivity measures where the obvious response was the dominant one.

The results of this investigation leads one to question the

age-old bohemian stereotyped conception envisioning the productive artist to be an individual who has suffered and experienced conflict most of his life. Possibly researchers in the area of creativity should explore the lives of the so-called "conflicted frustrated" artists in greater detail to determine whether they were most creative during periods of turmoil and conflict or during periods of peace and tranquility. Biographical investigations designed solely to compare quantity and quality of production of conflicted and non-conflicted artists tend to overlook this "periocity" (whether creativity occurs during, between, or after periods of turmoil and chaos) question completely.

These results may also be discussed in relation to other areas of life, educational and therapeutic settings for example, where the presence of conflict might also tend to disrupt and inhibit creative expression. In the classroom curiosity motivation as manifested in a desire to explore and learn about one's surroundings is inferred from creative expression (Neill, 1960; Moustakas, 1956; McReynolds, 1961; Faw, 1944; Jackson, 1957; Getzels and Jackson, 1962) and has been observed to decline among conflicted individuals (McReynolds, 1961). A number of conflicts confront the school age child, i.e., (1) potential rejection by parents and peers, (2) open and direct expression of aggression and rebellion, (3) lack of skills and personal competence, etc., which might tend to inhibit his curiosity and prevent him from performing creatively. The results of the present investigation as well as the theoretical views discussed previously with respect to the learning environment suggest that a propitious environment for the expression of creativity would be one where conflicts were minimized leaving students free to explore, learn about, and creatively relate to their surroundings.

Teachers and educators should seriously consider establishing educational environments of this type. By setting up conditions of psychological "safety" and "freedom," i.e., accepting the individual for his unconditional worth, providing a climate in which external evaluation is absent, understanding empathically (Rogers, 1959), teachers may be able to maximize the likelihood of an emergence of constructive creativity in the classroom. It is likely that in an environment of this sort the students' tendencies towards rigidity and defensiveness will diminish and be replaced by an increasing openness to experience. By remaining open to their experience students will be able to make the most creative use of the learning experience provided them. In the future psychologists interested in the area of creativity might perform experiments to determine the ways in which the presence or absence of conflict effects creative expression in the classroom. Although there have been numerous studies performed in the classroom in recent years, none have dealt specifically with the effect of conflict on creative activity.

If conflict impairs creativity and if creativity is considered to be necessary for growth in therapy (Rogers, 1959; Moustakas, 1956; and May, 1959), then growth and creative change may be retarded in therapeutic environments where conflict is present. If the therapist wishes to rely on creative processes as a source of gain, then he might consider establishing a safe non-conflicted environment where the patient will feel free enough to express himself in a creative, open, emotive manner. According to Rogers one of the ways in which the therapist may contribute to the patient's sense of security is by expressing unconditional positive regard for him. Experiencing unconditional positive regard for the patient means that the therapist cares for him as a person and not

because he behaves in such and such a manner. By accepting the patient as he is in the present, the patient may in turn begin, possibly for the first time in his life, to experience himself as a worthwhile person. To communicate such feelings to the patient, the therapist has to accept the patient's expression of negative, bad, painful, fearful, and abnormal feelings as he accepts the patient's expression of good, natural, social feelings. According to Rogers to the degree that the therapist can provide this safety, creating non-conflict producing climate of unconditional positive regard, significant learning and growth is to occur.

On the whole the results of the present study indicate that the manner in which creativity is defined will play a crucial role in future research in this area. If in the definition, more emphasis is placed on productivity factors, then conflict might not be expected to adversely effect performance. On the other hand, where originality factors are emphasized, conflict could be expected to adversely effect performance. The distinction between creativity tests measuring productivity factors on the one hand and those measuring originality factors on the other should be clearly defined in future research utilizing such tasks.

As a next step in the extension of this research, this experiment could be replicated with a group of non-religious Ss to attempt to determine if these results are generalizable beyond the present subject population.

## CHAPTER VI

### SUMMARY

The purpose of the present research was to compare Freud's position on conflict as facilitative to creative activity to that of Rogers' who feels that conflict impairs creative activity. A state of sexual conflict was introduced to one group of subjects while leaving a control group free from such conflict. In terms of this research design, psychoanalytic theory predicted that the sexually conflicted group would produce qualitatively better creative output on creativity tests while Rogerian theory predicted that the non-conflicted group would perform more creatively on tests designed to measure behavior of this type.

In a preliminary investigation an actual state of sexual conflict was induced in a group of highly religious Ss whom it was felt would be especially susceptible to such conflict. The experimental design which proved successful in establishing conflict in the preliminary investigation was repeated in the present investigation. The Ss consisted of 60 University of Oklahoma students who had described themselves (on a questionnaire) as being highly religious. These Ss were divided randomly and without bias into the experimental and control groups. Conflict was established in the experimental Ss by requiring them to make a choice whether or not they wanted to view pictures of nude women. The control group was required to make a choice whether they wanted to view a local

newspaper, a choice which did not place them in conflict. Before these decisions were made, these Ss performed on a number of standardized creativity tasks, some of which emphasized originality factors and others productivity factors.

On the whole the results indicated that conflict impaired the experimental Ss performance on the originality measures, but did not impair their performance on the productivity measures. These results supported Rogerian theory which suggests that conflict impairs creative behavior and are dissonant with the Freudian notion that conflict facilitates creativity. The results obtained in this study were explained in terms of Rogers' theory of creativity where conflict is felt to inhibit behaviors typically associated with creative activity, i.e., curiosity motivation, spontaneity, flexible thinking.

It was suggested that the experimental Ss performance on the originality measures was adversely affected while performance on the productivity measures was not due to the fact that the originality measures required more in the way of an open flexible response than the productivity measures. The conflicted Ss were apparently unable to respond in an open enough manner to do well on these tests. These results were also explained in terms of Spence's drive theory where conflict is felt to inhibit the emission of non-dominant, highly improbable responses.

The implications of these results for the development of creative behavior in the classroom and therapeutic setting were discussed. These results support the views of a number of educators and psychologists who feel that the presence of conflict in either setting stifles and inhibits creative forms of behavior. From Rogers' theory a number of behaviors were discussed which it was felt could aid the therapist or teacher in

establishing a non-conflict growth facilitative environment for the student or patient, e.g., experiencing unconditional positive regard for the patient, understanding empathically, establishing an internal locus of control.

Implications for future research included replication of the present study utilizing groups of non-religious subjects to determine if the present results are generalizable beyond the population used in this study.

## REFERENCES

- Bergler, E. The relation of the artist to society. American Imago, 1948, 5, 247-258.
- Collins, W. A study in Rogerian theory of creativity. Unpublished manuscript, George Peabody, 1963.
- Duncan, L. B. A reputation test of personality integration. Journal of Personality and Social Psychology, 1966, 3, 516-524.
- Eissler, K. R. Leonardo da Vinci - Psychoanalytic notes on the enigma. International Universities Press, New York: 1961.
- Eissler, K. R. Psychopathology and creativity. American Imago, 1967, 24, 35-82.
- Faw, Volney. A psychotherapeutic method of teaching psychology. American Psychologist, 1949, 4, 104-109.
- Fenichel, O. The psychoanalytic theory of neuroses. New York: W. W. Norton, 1945.
- Freud, S. Introductory lectures to psychoanalysis. Perma Grants, 1935.
- Freud, S. The unconscious. Collected papers, Vol. 4, London: The Hogarth Press, 1949.
- Freud, S. Civilization and its discontents. Garden City, New York: Doubleday, 1958.
- Getzels, J. V. & Jackson, P. W. Creativity and intelligence. New York: Wiley, 1962.
- Guilford, J. Three faces of intellect. American Psychologist, 1959, 14, 469-479.
- Greenacre, Phyllis. The childhood of the artist. Libidinal phase development and giftedness. The Psychoanalytic Study of the Child, 1957, 12, 47-72.
- Hadley, D. Experimental relationships between creativity and anxiety. Unpublished manuscript, University of Michigan, 1965.

- Hammer, E. F. Creativity. New York: Random House, 1961.
- Horney, K. Neurosis and human growth. New York: Norton, 1950.
- Jackson, J. V. The relationship between psychological climate and the quality of learning outcomes among lower-status pupils. Unpublished Ph.D. thesis, University of Chicago, 1957.
- Kris, N. Psychoanalysis and the study of creative imagination. Bulletin of the New York Academy of Medicine, 1958, 24, 334-351.
- Kubie, L. S. Neurotic distortion of the creative process. University of Kansas Press, 1958. Cited by J. L. Stamm, Creativity and sublimation. American Imago, 1967, 24, 82-98.
- Langfeld, H. S. Conflict and adjustment in art, In C. M. Campbell, H. S. Langfeld, W. McDougall, A. A. Roback and E. W. Taylor (Eds.), Problems of personality. Harcourt, Brace, 1925, 373-383.
- MacKinnon, D. What do we mean by talent and how do we use it? In The search for talent. New York: College Entrance Board, 1960.
- Maltzman, I. A procedure for increasing word association originality and its transfer effects. Journal Experimental Psychology, 1958, 56, 392-398.
- Martin, A. R. The dynamics of insight. American Journal of Psychoanalysis, 1952, 12, 24-38.
- May, R. The nature of creativity. In H. H. Anderson (Ed.), Creativity and its cultivation. New York: Harper, 1959, 55-68.
- McReynolds, P. Relation of object curiosity to psychological adjustment in children. Child Development, 1961, 32, 393-400.
- Metz, W. The relative effects of stress and praise on creativity. Unpublished manuscript, Florida State University, 1961.
- Moustakas, C. The teacher and the child. New York: McGraw Hill, 1956.
- Munsterberg, Elizabeth. The personality structures of art students. Journal of Personality, 1953, 21, 457-466.
- Neill, A. Summerhill. A radical approach to child rearing. Hart Publishing Co., 1960.
- Phillips, W. Art and psychoanalysis. Cleveland: Meridian Books, 1957.
- Rogers, C. Toward a theory of creativity. In H. H. Anderson (Ed.), Creativity and its cultivation. New York: Harper, 1959, 69-82.
- Rogers, C. On becoming a person. Boston: Houghton Mifflin Co., 1961.

- Seeman, J. Studies in personality integration. Peabody papers on human development, 1963, 1, 1-19.
- Seeman, J. Personality integration in college women. Journal of Personality and Social Psychology, 1966, 4, 91-93.
- Slochow, H. Symbolism and the creative process. American Imago, 22, 1965. Cited by J. L. Stamm, Creativity and sublimation. American Imago, 1967, 24, 82-98.
- Snyder, R. The authentic life. Its theory and practice. Philadelphia: Friends General Conference, 1959.
- Spence, K. W. A theory of emotionally based drive (D) and its relations to performance in simple learning situations. American Psychologist, 1958, 13, 131-141.
- Stamm, J. L. Creativity and sublimation. American Imago, 1967, 24, 82-96.
- Trilling, L. Art and neurosis. In W. Phillips (Ed.), Art and psychoanalysis. Cleveland: Meridian Books, 1957, 502-539.
- Waelder, R. Freud Anniversary Address. Paper presented at the meeting of the New York Psychoanalytic Society, New York, 1958.
- Wenkart, A. Modern art and human development. American Journal of Psychoanalysis, 1960, 20, 174-179.
- White, R. K. Note on the psychopathology of genius. Journal of Social Psychology, 1930, 1, 311-315.
- Wright, L. The performance of overachieving males on certain measures of efficiency and divergence: A study of personality integration. Unpublished doctoral dissertation, George Peabody, 1964.
- Wrightsman, L. The religiosity test. Unpublished test, Nashville, Tennessee.

APPENDIX A. LIKERT CONFLICT SCALE

## APPENDIX A

## LIKERT CONFLICT SCALE

The opportunity to observe the nude pictures and the subsequent decision that I was required to make as to whether or not to look created the following state of conflict in me. Check one of the statements below.

|          |          |          |             |               |              |
|----------|----------|----------|-------------|---------------|--------------|
| extreme  | moderate | slight   | slight lack | moderate lack | extreme lack |
| conflict | conflict | conflict | of conflict | of conflict   | of conflict  |

If conflict was experienced at what point did it begin.

1. setting up equipment
2. reading of instructions
3. performance of tasks
4. making of choice as to whether to look or not

At what point did it subside \_\_\_\_\_

## APPENDIX B. CONSEQUENCES

## APPENDIX B

## CONSEQUENCES

1. What would be the results if none of us needed food any more in order to live?
2. What would be the results if humans lost their group feeling to the extent that they all preferred to live alone?
3. What would be the results if the entire United States west of the Mississippi became an arid desert?
4. What would be the results if everyone suddenly lost the sense of balance and were unable to stay in the upright position for more than a moment?
5. What would be the results if all the people in the world lost the ability to reproduce offspring?
6. What would be the results if it appeared certain that within three months the entire surface of the earth would be covered with water, except for a few of the highest mountain peaks?
7. What would be the results if everyone suddenly lost the ability to read and write?
8. What would be the results if human life continued on earth without death?
9. What would be the results if the force of gravity were suddenly cut in half?
10. What would be the results if suddenly no one could use arms or hands?

## APPENDIX C. ALTERNATE USES

## APPENDIX C

## ALTERNATE USES

List as many as six possible uses for each of the following objects:

1. SHOE (used as footwear)
2. BUTTON (used to fasten things)
3. KEY (used to open a lock)
4. CHAIR (used for sitting)
5. WATCH (used for telling time)
6. SAFETY PIN (used for fastening)
7. WOODEN PENCIL (used for writing)
8. AUTOMOBILE TIRE (used on the wheel of an automobile)
9. EYEGLASS (used to improve vision)

APPENDIX D. RAW DATA FOR CONTROL SUBJECTS

## APPENDIX D

## RAW DATA FOR CONTROL SUBJECTS

| S  | GPA  | Alternate<br>Uses | Original<br>Uses | Obvious<br>Conseq. | Remote<br>Conseq. | Prod. | Seeman's<br>Orig. | Elab. |
|----|------|-------------------|------------------|--------------------|-------------------|-------|-------------------|-------|
| 1  | 2.69 | 21                | 10               | 28                 | 11                | 16    | 4                 | 2.75  |
| 2  | 2.47 | 24                | 15               | 22                 | 13                | 14    | 4                 | 2.92  |
| 3  | 2.07 | 13                | 5                | 23                 | 10                | 11    | 2                 | 3.45  |
| 4  | 2.00 | 22                | 5                | 37                 | 9                 | 8     | 1                 | 2.25  |
| 5  | 2.70 | 17                | 4                | 20                 | 18                | 21    | 8                 | 2.38  |
| 6  | 2.06 | 13                | 3                | 17                 | 18                | 13    | 3                 | 1.76  |
| 7  | 3.43 | 25                | 9                | 34                 | 12                | 12    | 4                 | 2.66  |
| 8  | 2.94 | 17                | 5                | 28                 | 8                 | 22    | 7                 | 1.86  |
| 9  | 2.37 | 21                | 5                | 30                 | 11                | 24    | 10                | 2.25  |
| 10 | .90  | 15                | 6                | 22                 | 10                | 7     | 2                 | 1.85  |
| 11 | 2.71 | 15                | 8                | 35                 | 10                | 19    | 6                 | 2.36  |
| 12 | 3.00 | 25                | 9                | 25                 | 15                | 24    | 10                | 2.41  |
| 13 | 1.75 | 21                | 4                | 38                 | 13                | 6     | 0                 | 1.66  |
| 14 | 2.10 | 14                | 5                | 32                 | 10                | 19    | 3                 | 2.10  |
| 15 | 1.73 | 16                | 1                | 53                 | 22                | 19    | 6                 | 2.31  |
| 16 | 1.60 | 15                | 10               | 23                 | 7                 | 9     | 1                 | 3.00  |
| 17 | 2.00 | 31                | 8                | 21                 | 14                | 15    | 2                 | 2.20  |
| 18 | 1.00 | 20                | 5                | 34                 | 8                 | 11    | 1                 | 2.63  |
| 19 | 1.88 | 18                | 9                | 26                 | 8                 | 6     | 0                 | 3.16  |
| 20 | 2.00 | 17                | 10               | 17                 | 10                | 9     | 4                 | 3.00  |
| 21 | 4.00 | 12                | 3                | 38                 | 18                | 14    | 6                 | 1.33  |
| 22 | 2.63 | 19                | 8                | 27                 | 22                | 19    | 7                 | 2.43  |
| 23 | 2.23 | 16                | 4                | 28                 | 5                 | 21    | 1                 | 1.71  |
| 24 | 1.40 | 21                | 4                | 21                 | 12                | 21    | 5                 | 1.66  |
| 25 | 2.30 | 24                | 9                | 22                 | 18                | 20    | 5                 | 2.00  |
| 26 | 2.10 | 14                | 3                | 25                 | 10                | 14    | 3                 | 1.85  |
| 27 |      | 24                | 8                | 34                 | 13                | 21    | 5                 | 2.28  |
| 28 | 2.27 | 16                | 8                | 19                 | 23                | 10    | 4                 | 2.40  |
| 29 |      | 20                | 9                | 32                 | 4                 | 10    | 1                 | 2.33  |
| 30 |      | 17                | 2                | 24                 | 9                 | 12    | 7                 | 2.36  |

APPENDIX E. RAW DATA FOR EXPERIMENTAL SUBJECTS

## APPENDIX E

## RAW DATA FOR EXPERIMENTAL SUBJECTS

| S  | GPA  | Alternate | Original | Obvious | Remote  | Seeman's |       |       |
|----|------|-----------|----------|---------|---------|----------|-------|-------|
|    |      | Uses      | Uses     | Conseq. | Conseq. | Prod.    | Orig. | Elab. |
| 1  | 3.06 | 10        | 2        | 15      | 9       | 20       | 3     | 2.16  |
| 2  |      | 23        | 10       | 21      | 6       | 6        | 3     | 4.66  |
| 3  | 2.00 | 18        | 5        | 18      | 11      | 11       | 4     | 2.90  |
| 4  | 1.94 | 13        | 8        | 23      | 5       | 22       | 4     | 1.86  |
| 5  | 1.5  | 16        | 6        | 30      | 4       | 10       | 0     | 1.50  |
| 6  | 3.60 | 17        | 5        | 24      | 16      | 18       | 4     | 2.16  |
| 7  | 3.89 | 12        | 5        | 31      | 13      | 7        | 2     | 2.57  |
| 8  | 2.80 | 22        | 8        | 25      | 14      | 16       | 8     | 2.81  |
| 9  | 2.14 | 6         | 1        | 15      | 5       | 21       | 6     | 1.90  |
| 10 | 2.60 | 19        | 3        | 24      | 7       | 19       | 3     | 2.78  |
| 11 | 2.00 | 15        | 4        | 27      | 9       | 21       | 3     | 1.70  |
| 12 | 2.88 | 14        | 1        | 38      | 13      | 21       | 1     | 2.00  |
| 13 |      | 10        | 2        | 18      | 8       | 7        | 3     | 2.85  |
| 14 |      | 13        | 2        | 20      | 6       | 24       | 1     | 2.18  |
| 15 | 2.70 | 21        | 6        | 49      | 7       | 22       | 5     | 2.00  |
| 16 | 1.76 | 14        | 2        | 31      | 14      | 21       | 8     | 1.95  |
| 17 |      | 10        | 5        | 32      | 19      | 18       | 2     | 1.22  |
| 18 |      | 11        | 2        | 16      | 9       | 16       | 3     | 1.50  |
| 19 | 1.40 | 19        | 7        | 33      | 12      | 20       | 3     | 2.50  |
| 20 | 2.67 | 35        | 17       | 46      | 17      | 29       | 8     | 1.72  |
| 21 | 2.80 | 11        | 2        | 28      | 9       | 14       | 2     | 1.86  |
| 22 | 2.00 | 18        | 4        | 33      | 3       | 16       | 4     | 1.31  |
| 23 | 1.99 | 16        | 5        | 39      | 7       | 16       | 6     | 1.50  |
| 24 | 2.30 | 8         | 1        | 13      | 4       | 14       | 8     | 2.42  |
| 25 | 2.81 | 13        | 3        | 20      | 5       | 17       | 4     | 1.75  |
| 26 |      | 21        | 4        | 25      | 16      | 12       | 3     | 1.64  |
| 27 | 1.90 | 26        | 6        | 36      | 9       | 27       | 5     | 1.58  |
| 28 | 2.30 | 9         | 0        | 30      | 7       | 17       | 2     | 1.88  |
| 29 | 3.56 | 18        | 6        | 30      | 20      | 10       | 6     | 2.70  |
| 30 | 2.60 | 23        | 4        | 27      | 19      | 24       | 4     | 1.66  |

APPENDIX F. CIRCLES TEST

## APPENDIX F - CIRCLES TEST

